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AERONAUTICAL SYSTEMS DIV WRIGHT-PATTERSON AFB OHIO

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SERVICE TEST OF MEN AND WOMEN EXPERIMENTAL BLUE 1549 WASHABLE U--ETC(U)

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**SERVICE TEST OF MEN AND WOMEN
EXPERIMENTAL BLUE 1549 WASHABLE UNIFORMS**

*CLOTHING DIVISION
DIRECTORATE OF EQUIPMENT ENGINEERING*

JULY 1977



TECHNICAL REPORT ASD-TR-76-21
Final Report for period February 1975 – February 1976

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AIR FORCE AERONAUTICAL SYSTEMS DIVISION
AIR FORCE SYSTEMS COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

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FOR THE COMMANDER

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PREFACE

This test program was accomplished in response to a letter directive from the Air Force Uniform Board, HQ USAF. Norman L. Childs, and Ralph A. Goodwin were the project officers. The actual wear tests were accomplished by Military personnel of the Orientation Group (AFOG/DT) Wright-Patterson Air Force Base, Ohio 45433 for the men, and the women uniforms were tested at all major command in the United States and one oversea command. The tests were conducted during the period February 1975 and February 1976.

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INTRODUCTION

At the request of the Air Force Uniform Board, HQ USAF, a task was established to design and develop an Air Force Blue 1549 service uniform (coat, trousers, and skirt) which will be completely washable and suitable for home laundering with a minimum amount of touch-up pressing required.

Description: The design of this wash and wear uniform has the same outward appearance, detail and fit concept as the present Air Force Blue 1549 Service Uniform. The uniforms were made from two (2) types of fabrics using fusible interlining in the coat fronts, sleeve bottoms, shoulder loops and back vent stays to improve the appearance, reduce puckering, and give body to the fabrics. All metal buttons are removable to facilitate washing or pressing.

Fabrics Tested: Type I - 100% Texturized Polyester Serge
(Standard Optional Fabric)

Type II - 100% Texturized Polyester Gabardine
(Experimental Fabric)

Purpose of Test: To obtain user opinions about two washable uniforms relative to fit, comfort, appearance, maintenance and wearing characteristics during a six months test for women and a one year test period for the men.

Test Objectives:

To Check Acceptability and Compatibility: Personnel are to comparatively evaluate the texturized polyester serge with the texturized polyester gabardine fabric. Test questionnaires will include the following areas:

- (1) Crease retention after each wearing and washing.
- (2) Resistance to snagging or bagging.
- (3) Wrinkle resistance after each wearing.
- (4) Colorfastness to light and laundering.
- (5) Comfort at low and high temperatures.
- (6) Static electricity (clinging) and pilling (bunching of fibers on the face of the fabric).

- (7) Durability after exposure to repeated washing (hand, feel of material and drape, shape of material), stains (food, ink, tea, oil, alcohol, coffee, grease, etc.), stretch, shrink or glazing (shiny surface).

Materials:

Type I

Basic Outershell Cloth

Characteristics

Properties

Fiber Content

100% Texturized Polyester
Continuous Filament

Weave

Serge (Twill)

Weight - per sq yd

6.5 ounces

Texture

Warp/Inch

68

Filling/Inch

62

Color

Blue 1549

Tensile - Pounds/Inches

Warp

220

Filling

200

Type II

Basic Outershell Cloth

Characteristics

Properties

Fiber Content

100% Texturized Polyester
Continuous Filament

Weave

Gabardine (Twill)

Weight - per sq yd

6.0 ounces

Texture

Warp/Inch

121

Filling/Inch

65

Color

Blue 1549

Tensile - Pounds/Inches

Warp

188

Filling

178

Sleeve and Body Lining

Characteristics

Properties

Fiber Content

100% Nylon Continuous Filament

Weave

Plain

Weight - sq yd

2 ounces

Color

Navy Blue

Texture

Warp/Inch

96

Filling/Inch

86

SERVICE TEST DISTRIBUTION PLAN

Quantity

Men	100 Uniforms each type
Women	50 uniforms each type
	1 each type retained by ASD/ENEU for sample

Participating Commands

Men	Orientation Group (AFOG/DT) Wright-Patterson AFB OH 45433
Women	ATC, MAC, SAC, TAC, AFLC, CINCPACAF and HQ USAF/DPW

Duration of Test

Men	1 year
Women	6 months

Distribution

Distribution of the men's washable uniforms was in accordance with AFSC/SDAE TWX dated 7 January 1975. The women's was in accordance with HQ USAF/DPW.

All men uniforms were tested by the Orientation Group at Wright-Patterson AFB OH 45433.

Since the Air Force Orientation Group at Wright-Patterson AFB tested the men uniforms, ASD/ENEU was able to perform the following functions:

- a. Visit organization accomplishing service test.
- b. Work with the test monitor on distribution (size and fit).
- c. Explain test purposes and reporting procedure.
- d. Follow-up on test progress.

The women uniforms were tested at the following locations:

<u>Address</u>	<u>Total</u> (Each Type)
HQ USAF/DPW Wash DC 20330	11
HQ ATC/RSON Randolph AFB TX 78148	3
HQ AFLC/DPW Wright-Patterson AFB OH 45433	5
AFROTC/DUA Maxwell AFB AL 36112	5
HQ ATC/DPW Randolph AFB TX 78148	5
HQ MAC/DPW Scott AFB IL 62225	5
HQ TAC/DPXR Langley AFB VA 23365	5
CINCPACAF/DPX Apo San Francisco 96553	5
CINCSAC/DPW Offutt AFB NE 68113	5

CONDUCT OF TEST

A monitor was assigned at each test site who was responsible for the issuing of the experimental uniforms, questionnaires and the return to ASD/ENEU, Wright-Patterson, Ohio 45433 at the end of the test period.

Only those individuals who would normally wear the Blue 1549 service uniform while performing their assigned duties during the test period were selected as test participants.

Each test participant was requested to wear his experimental uniform as he would his standard uniform, since the test participant would be testing two uniforms of different fabrics. The participant would alternate the wearing of the uniforms so that each test garment was worn the same amount of time during the test period.

CONCLUSIONS

An evaluation of the test questionnaire results and comments made by test participants indicate a very high level of acceptance that Air Force personnel would welcome a wash and wear Class A uniform as an optional garment.

Frequent comments made relative to the wash and wear uniform were:

- a. "It maintained a neat appearance for an extended period of time."
- b. "I love both test uniforms."
- c. "Very positive reaction from others on appearance."
- d. "Both uniforms are superior to the standard uniform in comfort and they are easy to care for."
- e. "I like the convenience of a wash and wear garment."

There were minor difficulties:

- a. "Type II "fuzzing" at wear points and cuffs fraying."
- b. "Breast pocket sew down points came loose."
- c. "Button holes should be of heavier construction."
- d. "Wallet pocket not deep enough."
- e. "Thread breakage in seams."

The above difficulties are considered normal for everyday wear of uniform.

RECOMMENDATIONS

It is recommended that the Air Force Uniform Board approve the wash and wear uniform as an optional garment. If the complete uniform service coat and trousers, service coat and skirt are not approved, it is recommended that the trouser and skirt be approved in the Type I, 100% Texturized Polyester Serge (Standard Optional Fabric), in a wash and wear construction as an optional item.

APPENDIX I

BLUE 1549 WASHABLE UNIFORM

LAUNDERING INSTRUCTIONS

Before Washing:

Pre-treatment of badly soiled areas is strongly recommended. Apply a liquid detergent to soiled spots and thoroughly work it into the material. A medium paste made from a dry detergent and water can be used also for the same purpose. Grease spots can usually be removed before washing by use of a spotting agent.

Machine Washing:

Wash the suit for 5 minutes in warm (100°F) water using a regular detergent or soap. Use the machine's wash and wear cycle if one is available. Whether the wash and wear or the regular machine cycle is used, the washer should be run through the complete cycle including spins and rinses.

Machine Drying:

Tumble dry at a low to medium temperature setting (140° to 160°F) for 20 to 40 minutes. Use the machine's special wash and wear cycle if one is available. A little experimentation with your laundry equipment to determine what conditions works best for your particular suit will be well rewarded with very satisfactory results. CAUTION: AVOID THE USE OF HIGH TEMPERATURE SETTING, AND DO NOT OVER DRY. Remove the garment immediately at the end of the drying cycle. Hang the coat and skirt on hangers and smooth the collar, lapels, and seams with the fingers.

Alternative Laundering Methods:

1. Machine Washing and Drip Drying:

Follow the machine washing procedures above. However, the garment should be removed dripping wet from the washer before the final spin. Hang the suit on a non-staining hanger, smooth the collar, lapels and seams with the fingers and allow to dry.

2. Hand Washing and Drip Drying:

Wash the garment in warm (100°F) water using a heavy duty detergent or soap and water softener. DO NOT WRING OR TWIST THE SUIT. Rinse thoroughly and hang on a non-staining hanger. Smooth the collar, lapels and skirt seams with the fingers and allow to dry.

3. Pressing:

Should pressing become necessary use a steam iron or dry iron on the Rayon or "Perma Press" setting, together with a pressing cloth for best results. After several launderings it may be necessary to press the uniform on a commercial pressing machine.

APPENDIX II

RESULTS OF QUESTIONNAIRE

The data presented is based on sixty-five wearer questionnaires during the first six months test period and forty-one for the second six month period for the men. The women's is based on thirty-nine wearer questionnaires.

The word "cleaning" in questions 14-19, is intended to provide a general reference to the cleaning process. The questions were directed at the effects of laundering which was the primary objective of the wear test. Later question(s) address the specific process of dry cleaning.

Experimental Men's Washable Air Force Uniform

First Six Months

Data As Given In Test Questionnaires

1. Rank:

1. Amn-A1C	2%	7. CMSgt	2%	40. LtCol	1%
2. Sgt	6%	8. FSgt	0%	50. Col	3%
3. SSgt	30%	9. 2Lt	0%	60. Brig Gen	2%
4. TSgt	17%	10. 1Lt	2%	70. Maj Gen	2%
5. MSgt	9%	11. Capt	11%	80. Lt Gen	0%
6. SMSgt	4%	12. Major	9%	90. General	0%

2. What percent of your time do you spend at your desk?

1. 00-20%	26%
2. 21-40%	9%
3. 41-60%	25%
4. 61-80%	31%
5. 81-100%	8%
6. No comment	1%

3. What percent of your time do you spend outside your office?

1. 00-20%	28%
2. 21-40%	32%
3. 41-60%	14%
4. 61-80%	6%
5. 81-100%	18%
6. No comment	2%

4. In which one of the following temperature zones was the uniform worn?

<u>ZONE</u>	<u>COOLEST MONTH</u>	<u>WARMEST MONTH</u>	
1. Tropical	Above 68 Deg. F.	Above 68 Deg. F.	6%
2. SemiTropical	50 to 68 Deg. F.	Above 68 Deg. F.	6%
3. Warm Temperature	32 to 50 Deg. F.	Above 68 Deg. F.	23%
4. Mild Temperature	32 to 50 Deg. F.	50 to 68 Deg. F.	17%
5. Cool Temperature	Below 32 Deg. F.	Above 68 Deg. F.	45%
6. Cold Temperature	14 to 32 Deg. F.	50 to 68 Deg. F.	2%
		No comment	1%

5. What build are you?

1. Slender	8%
2. Medium	69%
3. Medium Heavy	17%
4. Heavy	6%

6. How did the size received compare with size normally worn?

1. Same	63%
2. Smaller	11%
3. Larger	26%

7. What size uniform did you receive?

1. 38	14%
2. 40	32%
3. 42	40%
4. 44	12%
5. No comment	2%

8. What length uniform did you receive?

1. Short	12%
2. Regular	62%
3. Long	25%
4. No comment	1%

9. What size uniform do you normally wear?

1. 38	14%
2. 40	30%
3. 42	40%
4. 44	14%
5. No comment	2%

10. What length uniform do you normally wear?

1. Short	12%
2. Regular	62%
3. Long	25%
4. No comment	1%

11. What alterations were required on the coat for you to obtain a satisfactory fit? (More than one number can be selected).

1. None	65%
2. Sleeves shorted	18%
3. Sleeves lengthen	0%
4. Coat sides (let out)	0%

5. Coat sides (taken-up)	0%
6. Collar shorten	9%
7. Other (specify)	0%
8. No comment	8%

Out of a total of 180 days for the test period, how many total days did you wear the uniform?

12. Type I

Average of 60 days

13. Type II

Average of 60 days

How was the test garment laundered?

14. Type I

37%	1. Home laundry
6%	2. Always commercial
11%	3. Some coin operated cleaning
37%	4. Equal amount of each
9%	5. No comment

15. Type II

42%
8%
11%
35%
4%

To what extent did cleaning detract/enhance the uniform appearance?

16. Type I

6%	1. Detracted
60%	2. No influence
25%	3. Enhanced
9%	4. No comment

17. Type II

8%
62%
26%
4%

Did cleaning affect the fit of the uniform?

18. Type I

0%	1. Excessive shrinkage
3%	2. Some shrinkage
85%	3. No affect
1%	4. Some stretching
0%	5. Excessive stretching
11%	6. No comment

19. Type II

0%
3%
88%
4%
0%
5%

What was the texture of the test garment material? (Especially around cuffs, pocket front, back vent stay, coat front, or shoulder loops).

20. Type I

11%	1. Material pliable
12%	2. Material slightly pliable
54%	3. Material holds shape
6%	4. Material slightly stiff
0%	5. Material stiff
17%	6. No comment

21. Type II

4%
20%
66%
2%
0%
8%

To what degree did you notice any puckering, shifting or pulling of a seam after washing.

22. Type I

4%	1. Excessive
9%	2. Slight
79%	3. Non-Existent
8%	4. No comment

23. Type II

2%
34%
60%
4%

How often was the uniform touched-up or pressed at home with a cloth and steam iron?

24. Type I

51%	1. Never
28%	2. Seldom (Once a Month)
6%	3. Sometimes (Once Every Two Weeks)
9%	4. Frequently (Once a Week)
0%	5. Very Frequently (Almost Daily)
6%	6. No comment

25. Type II

52%
29%
4%
9%
0%
6%

If the uniform was pressed at home, how smooth did it appear?

26. Type I

0%	1. Very rough
0%	2. Rough
49%	3. Smooth
6%	4. Very smooth
45%	5. No comment

27. Type II

0%
1%
43%
11%
45%

To what degree was shape retention affected by wrinkling?

28. Type I

56%	1. No affect
30%	2. Slight
3%	3. Moderate
0%	4. Marked affect
11%	5. No comment

29. Type II

51%
32%
8%
1%
8%

How well did the uniform retain its shape?

30. Type I

0%	1. Very poor
1%	2. Poor
45%	3. Good
45%	4. Very good
9%	5. No comment

31. Type II

2%
2%
51%
41%
4%

To what extent did the wrinkles hang out overnite?

32. Type I

20%	1. No wrinkles remained
48%	2. Almost no wrinkles remained
22%	3. Some wrinkles remained
1%	4. Almost all remained
9%	5. No comment

33. Type II

23%
43%
23%
5%
6%

In every other day use to what degree did the test uniform maintain a well pressed appearance?

34. Type I

3%	1. Uniform appeared very unkempt
15%	2. Uniform appeared slightly unkempt
42%	3. Uniform appeared pressed
29%	4. Uniform appeared well pressed
11%	5. No comment

35. Type II

3%
11%
54%
26%
6%

How do you feel others evaluated your appearance in the test garment?

36. Type I

0%	1. Negative reaction
3%	2. No noticeable reaction
85%	3. Positive reaction
12%	4. No comment

37. Type II

0%
8%
91%
1%

In what manner did the uniform react to rain, excessive humidity, etc?

38. Type I

0%	1. Completely lost its shape
26%	2. Moderate decrease in shape retention
63%	3. No decrease in shape retention
11%	4. No comment

39. Type II

0%
28%
66%
6%

How would you rate the warmth characteristics of the test garment compared to the standard uniform in cool/cold weather?

40. Type I

11%	1. Less satisfactory
37%	2. Equal
37%	3. More satisfactory
15%	4. No comment

41. Type II

6%
48%
35%
11%

How would you rate the coolness characteristics of the test garment compared to the standard uniform in warm/hot weather?

42. Type I

15%	1. Less satisfactory
32%	2. Equal
44%	3. More satisfactory
9%	4. No comment

43. Type II

9%
34%
53%
4%

Did you perspire more/less than your normal rate in the test garment?

44. Type I

17%	1. More
42%	2. The same
32%	3. Less
9%	4. No comment

45. Type II

9%
42%
45%
4%

To what extent, if any, did the fabric show any defects at the end of the test period?

46. Type I

38%	1. None at all
45%	2. Some defects
8%	3. Obvious defects
9%	4. No comment

47. Type II

48%
38%
8%
6%

To what extent, if any, did the seam construction show any defects at the end of the test period?

48. Type I

57%	1. None at all
25%	2. Some defects
9%	3. Obvious defects
9%	4. No comment

49. Type II

58%
22%
12%
8%

After washing the uniform did you notice any spots or stains?

50. Type I

81%	1. No spots or stains remained
9%	2. Almost no spots or stains remained
4%	3. Some spots or stains remained
0%	4. Almost all spots or stains remained
6%	5. No comment

51. Type II

77%
14%
8%
0%
1%

If so was it:

52. Type I

4%	1. Food
2%	2. Ink
4%	3. Oil
0%	4. Alcohol
3%	5. Coffee
2%	6. Grease
2%	7. Tea
65%	8. None
18%	9. No comment

53. Type II

4%
3%
4%
0%
2%
2%
0%
62%
23%

Did the trouser crease stay?

54. Type I

55%
20%
11%
3%
11%

1. No affect
2. Slight affect
3. Moderate affect
4. Marked affect
5. No comment

55. Type II

55%
23%
11%
3%
8%

How many times was the uniform laundered?

56. Type I

Average of 10 times

57. Type II

Average of 10 times

To what extent, if any, did the lining show any defects at the end of the test period?

58. Type I

53%
17%
12%
18%

1. None at all
2. Some defects
3. Obvious defects
4. No comment

59. Type II

66%
12%
6%
16%

To what extent did perspiration affect the fabric's color?

60. Type I

89%
3%
4%
0%
4%

1. No affect
2. Slight affect
3. Moderate affect
4. Marked affect
5. No comment

61. Type II

87%
0%
4%
0%
9%

How do you consider the weight of the garment?

62. Type I

0%
88%
6%
6%

1. Too light
2. Satisfactory
3. Too heavy
4. No comment

63. Type II

2%
90%
4%
4%

How do you feel the construction of the test garment compares with that of the standard uniform?

64. Type I

4%
23%
64%
9%

1. Inferior
2. Equal
3. Superior
4. No comment

65. Type II

6%
25%
61%
8%

In general, what was your overall reaction to your test garment?

1	2	3	4	5	6	7
Unfavorable					Favorable	

66. Type I

0%	0%	1%	8%	6%	25%	52%
No comment - 8%						

67. Type II

0%	0%	5%	11%	6%	20%	52%
No comment - 6%						

Do you recommend this uniform for Optional wear?

1	2	3	4	5	6	7
No					Yes	

68. Type I

2%	0%	4%	6%	6%	8%	60%
No comment - 12%						

69. Type II

4%	3%	3%	6%	8%	5%	63%
No comment - 8%						

Which uniform do you like the best?

70. Type I

51%

Type II

48%

No comment 1%

Experimental Men's Washable Air Force Uniform

Second Six Months

Data As Given In Test Questionnaires

1. Rank:

1. Amn-A1C	7. CMSgt	40. LtCol
2. Sgt	8. FSgt	50. Col
3. SSgt	9. 2Lt	60. Brig Gen
4. TSgt	10. 1Lt	70. Maj Gen
5. MSgt	11. Capt	80. Lt Gen
6. SMSgt	12. Major	90. General

2. What percent of your time do you spend at your desk?

1. 00-20%	20%
2. 21-40%	17%
3. 41-60%	34%
4. 61-80%	7%
5. 81-100%	22%
6. No comment	0%

3. What percent of your time do you spend outside your office?

1. 00-20%	24%
2. 21-40%	29%
3. 41-60%	29%
4. 61-80%	5%
5. 81-100%	13%
6. No comment	0%

4. In which one of the following temperature zones was the uniform worn?

<u>ZONE</u>	<u>COOLEST MONTH</u>	<u>WARMEST MONTH</u>
1. Tropical	Above 68 Deg. F.	Above 68 Deg. F.
2. SemiTropical	50 to 68 Deg. F.	Above 68 Deg. F.
3. Warm Temperature	32 to 50 Deg. F.	Above 68 Deg. F.
4. Mild Temperature	32 to 50 Deg. F.	50 to 68 Deg. F.
5. Cool Temperature	Below 32 Deg. F.	Above 68 Deg. F.
6. Cold Temperature	14 to 32 Deg. F.	50 to 68 Deg. F.

Due to the nature of the units mission the uniforms were worn in all conditions of weather and temperature.

5. - 11. Same as shown on questionnaire covering first six months.

During the last half of the six-month test period, how many total days did you wear the uniform?

12. Type I

13. Type II

On the average they were alternated 50/50.

How was the test garment laundered?

14. Type I

15. Type II

1. Home laundry
2. Always commercial
3. Some coin operated cleaning
4. Equal amount of each
5. No comment

Each participant was to use home and commercial laundry on as equal a basis as possible but due to the heavy TDY during this phase it appears to be heavy on the commercial side, perhaps 60/40.

To what extent did cleaning detract/enhance the uniform appearance?

16. Type I

17. Type II

- | | | |
|-----|-----------------|-----|
| 15% | 1. Detracted | 17% |
| 56% | 2. No influence | 63% |
| 17% | 3. Enhanced | 20% |
| 12% | 4. No comment | 0% |

Did cleaning affect the fit of the uniform?

18. Type I

19. Type II

- | | | |
|-----|-------------------------|-----|
| 0% | 1. Excessive shrinkage | 0% |
| 7% | 2. Some shrinkage | 12% |
| 75% | 3. No affect | 82% |
| 3% | 4. Some stretching | 3% |
| 3% | 5. Excessive stretching | 3% |
| 12% | 6. No comment | 0% |

What was the texture of the test garment material (especially around cuffs, pocket front, back vent stay, coat front, or shoulder loops)?

20. Type I

10%	1. Material pliable
7%	2. Material slightly pliable
71%	3. Material holds shape
0%	4. Material slightly stiff
0%	5. Material stiff
12%	6. No comment

21. Type II

10%
5%
85%
0%
0%
0%

To what degree did you notice any puckering, shifting or pulling of a seam after washing.

22. Type I

7%	1. Excessive
46%	2. Slight
34%	3. Non-Existent
13%	4. No comment

23. Type II

5%
41%
54%
0%

* How often was the uniform "touched-up" or pressed at home with a cloth and steam iron?

24. Type I

1. Never
2. Seldom (Once a Month)
3. Sometimes (Once Every Two Weeks)
4. Frequently (Once a Week)
5. Very Frequently (Almost Daily)
6. No comment

25. Type II

* If the uniform was pressed at home, how smooth did it appear?

26. Type I

1. Very rough
2. Rough
3. Smooth
4. Very Smooth
5. No comment

27. Type II

* Numbers 24 thru 27 - Participants were told to have the uniforms steam press at a professional dry cleaner.

To what degree was shape retention affected by wrinkling?

28. Type I

36%	1. No affect
44%	2. Slight
5%	3. Moderate
3%	4. Marked affect
12%	5. No comment

29. Type II

46%
34%
15%
0%
5%

How well did the uniform retain its shape?

30. Type I

0%	1. Very poor
0%	2. Poor
44%	3. Good
44%	4. Very good
12%	5. No comment

31. Type II

5%
3%
48%
44%
0%

To what extent did the wrinkles hang out overnite?

32. Type I

17%	1. No wrinkles remained
46%	2. Almost no wrinkles remained
24%	3. Some wrinkles remained
0%	4. Almost all remained
13%	5. No comment

33. Type II

20%
60%
20%
0%
0%

In every other day use to what degree did the test uniform maintain a well pressed appearance?

34. Type I

0%	1. Uniform appeared very unkempt
7%	2. Uniform appeared slightly unkempt
57%	3. Uniform appeared pressed
24%	4. Uniform appeared well pressed
12%	5. No comment

35. Type II

0%
7%
50%
31%
12%

How do you feel others evaluated your appearance in the test garment?

36. Type I

0%	1. Negative reaction
10%	2. No noticeable reaction
78%	3. Positive reaction
12%	4. No comment

37. Type II

0%
3%
97%
0%

In what manner did the uniform react to rain, excessive humidity, etc?

38. Type I

0%	1. Completely lost its shape
15%	2. Moderate decrease in shape retention
73%	3. No decrease in shape retention
12%	4. No comment

39. Type II

5%
22%
73%
0%

How would you rate the warmth characteristics of the test garment compared to the standard uniform in cool/cold weather?

40. Type I

17%	1. Less satisfactory
39%	2. Equal
41%	3. More satisfactory
3%	4. No comment

41. Type II

22%
37%
41%
0%

How would you rate the coolness characteristics of the test garment compared to the standard uniform in warm/hot weather?

42. Type I

7%	1. Less satisfactory
39%	2. Equal
42%	3. More satisfactory
12%	4. No comment

43. Type II

5%
34%
61%
0%

Did you perspire more/less than your normal rate in the test garment?

44. Type I

10%	1. More
39%	2. The same
39%	3. Less
12%	4. No comment

45. Type II

5%
41%
51%
3%

To what extent, if any, did the fabric show any defects at the end of the test period?

46. Type I

27%	1. None at all
54%	2. Some defects
7%	3. Obvious defects
12%	4. No comment

47. Type II

44%
49%
7%
0%

To what extent, if any, did the seam construction show any defects at the end of the test period?

48. Type I

46%	1. None at all
22%	2. Some defects
20%	3. Obvious defects
12%	4. No comment

49. Type II

56%
22%
22%
0%

After washing the uniform did you notice any spots or stains?

50. Type I

66%	1. No spots or stains remained
15%	2. Almost no spots or stains remained
7%	3. Some spots or stains remained
0%	4. Almost all spots or stains remained
12%	5. No comment

51. Type II

78%
17%
5%
0%
0%

If so was it:

52. Type I

0%
5%
3%
0%
3%
3%
0%
74%
12%

1. Food
2. Ink
3. Oil
4. Alcohol
5. Coffee
6. Grease
7. Tea
8. None
9. No comment

53. Type II

5%
0%
3%
0%
0%
0%
0%
92%
0%

Did the trouser crease stay?

54. Type I

51%
27%
5%
5%
12%

1. No affect
2. Slight affect
3. Moderate affect
4. Marked affect
5. No comment

55. Type II

64%
24%
5%
7%
0%

How many times was the uniform laundered?

56. Type I

The number of times laundered varied, but on the average the uniforms were laundered every 4 to 5 weeks.

57. Type II

To what extent, if any, did the lining show any defects at the end of the test period?

58. Type I

44%
29%
15%
12%

1. None at all
2. Some defects
3. Obvious defects
4. No comment

59. Type II

54%
26%
20%
0%

To what extent did perspiration affect the fabric's color?

60. Type I

83%	1. No affect
5%	2. Slight affect
0%	3. Moderate affect
0%	4. Marked affect
12%	5. No comment

61. Type II

90%
10%
0%
0%

How do you consider the weight of the garments?

62. Type I

3%	1. Too light
85%	2. Satisfactory
0%	3. Too heavy
12%	4. No comment

63. Type II

3%
90%
7%
0%

How do you feel the construction of the test garment compares with that of the standard uniform?

64. Type I

22%	1. Inferior
30%	2. Equal
41%	3. Superior
7%	4. No comment

65. Type II

20%
39%
39%
2%

In general, what was your overall reaction to your test garment?

1	2	3	4	5	6	7
Unfavorable			Favorable			
66. Type I						
0%	10%	5%	0%	15%	17%	41%
No comment - 12%						
67. Type II						
0%	12%	3%	0%	27%	12%	46%
No comment - 0%						

Do you recommend this uniform for Optional wear?

1	2	3	4	5	6	7
						Yes

68. Type I

4%	3%	3%	0%	17%	7%	54%
No comment - 12%						

69. Type II

5%	0%	5%	5%	17%	15%	53%
No comment - 0%						

Which uniform do you like the best?

70. Type I	48%
Type II	42%
Type I & II	5%
No comment	5%

Experimental Women's Washable Uniform

Six Month Test Period

Data As Given In Test Questionnaires

1. Rank:

1. Amn-A1C	21%	7. CMSgt	0%	40. LtCol	5%
2. Sgt	21%	8. FSgt	0%	50. Col	8%
3. SSgt	15%	9. 2Lt	2%	60. Brig Gen	2%
4. TSgt	3%	10. 1Lt	0%	70. Maj Gen	0%
5. MSgt	5%	11. Capt	13%	80. Lt Gen	0%
6. SMSgt	0%	12. Major	0%	90. General	0%
				No comment	5%

2. What percent of your time do you spend at your desk?

1. 00-20%	3%
2. 21-40%	13%
3. 41-60%	31%
4. 61-80%	33%
5. 81-100%	18%
6. No comment	2%

3. What percent of your time do you spend outside your office?

1. 00-20%	36%
2. 21-40%	33%
3. 41-60%	23%
4. 61-80%	3%
5. 81-100%	3%
6. No comment	2%

4. In which one of the following temperature zones was the uniform worn?

<u>ZONE</u>	<u>COOLEST MONTH</u>	<u>WARMEST MONTH</u>	
1. Tropical	Above 68 Deg. F.	Above 68 Deg. F.	8%
2. SemiTropical	50 to 68 Deg. F.	Above 68 Deg. F.	23%
3. Warm Temperature	32 to 50 Deg. F.	Above 68 Deg. F.	41%
4. Mild Temperature	32 to 50 Deg. F.	50 to 68 Deg. F.	3%
5. Cool Temperature	Below 32 Deg. F.	Above 68 Deg. F.	15%
6. Cold Temperature	14 to 32 Deg. F.	50 to 68 Deg. F.	3%
		No comment	7%

5. What build are you?

1. Slender	18%
2. Medium	64%
3. Medium Heavy	15%
4. Heavy	0%
5. No comment	3%

6. How did the size received compare with size normally worn?

1. Same	36%
2. Smaller	33%
3. Larger	26%
4. No comment	5%

7. What size uniform did you receive?

1. 8	10%
2. 10	13%
3. 12	41%
4. 14	33%
5. No comment	3%

8. What length uniform did you receive?

1. Short	13%
2. Regular	59%
3. Long	23%
4. No comment	5%

9. What size uniform do you normally wear?

1. 8	15%
2. 10	18%
3. 12	28%
4. 14	36%
5. No comment	3%

10. What length uniform do you normally wear?

1. Short	23%
2. Regular	54%
3. Long	21%
4. No comment	2%

11. What alterations were required on the coat for you to obtain a satisfactory fit? (More than one number can be selected.)

1. None	27%	5. Coat sides (taken-up)	29%
2. Sleeves shorten	13%	6. Collar shorten	0%
3. Sleeves lengthen	13%	7. Other (specify	18%
4. Coat sides (let out)	0%		

Out of a total of 180 days for the test period, how many total days did you wear the uniform?

12. Type I

Average 62 days

13. Type II

Average 58 days

How was the garment laundered?

14. Type I

77%	1. Home laundry
8%	2. Always commercial
5%	3. Some coin operated cleaning
8%	4. Equal amount of each
2%	5. No comment

15. Type II

70%
10%
5%
10%
5%

To what extent did cleaning detract/enhance the uniform appearance?

16. Type I

13%	1. Detracted
67%	2. No influence
10%	3. Enhanced
10%	4. No comment

17. Type II

18%
64%
8%
10%

Did cleaning affect the fit of the uniform?

18. Type I

0%	1. Excessive shrinkage
15%	2. Some shrinkage
73%	3. No affect
5%	4. Some stretching
0%	5. Excessive stretching
7%	6. No comment

19. Type II

0%
18%
67%
5%
0%
10%

What was the texture of the test garment material (especially sleeve vent, buttonhole, coat front, shoulder loops, waistband?)

20. Type I

26%	1. Material pliable
8%	2. Material slightly pliable
56%	3. Material holds shape
0%	4. Material slightly stiff
0%	5. Material stiff
10%	6. No comment

21. Type II

23%
21%
43%
3%
0%
10%

To what degree did you notice any puckering, shifting or pulling of a seam after washing.

22. Type I

3%	1. Excessive
28%	2. Slight
59%	3. Non-Existent
10%	4. No comment

23. Type II

8%
36%
43%
13%

How often was the uniform "touched-up" or pressed at home with a cloth and steam iron?

24. Type I

3%	1. Never
10%	2. Seldom (Once a Month)
13%	3. Sometimes (Once Every Two Weeks)
33%	4. Frequently (Once a Week)
28%	5. Very Frequently (Almost Daily)
13%	6. No comment

25. Type II

2%
8%
8%
36%
31%
15%

If the uniform was pressed at home, how smooth did it appear?

26. Type I

0%	1. Very rough
8%	2. Rough
51%	3. Smooth
33%	4. Very smooth
8%	5. No comment

27. Type II

2%
8%
44%
36%
10%

To what degree was shape retention affected by wrinkling?

28. Type I

41%	1. No affect
41%	2. Slight
10%	3. Moderate
3%	4. Marked affect
5%	5. No comment

29. Type II

33%
35%
15%
5%
12%

How well did the uniform retain its shape?

30. Type I

0%	1. Very poor
8%	2. Poor
31%	3. Good
51%	4. Very good
10%	5. No comment

31. Type II

0%
10%
49%
3%
8%

To what extent did the wrinkles hang out overnite?

32. Type I

8%	1. No wrinkles remained
33%	2. Almost no wrinkles remained
41%	3. Some wrinkles remained
13%	4. Almost all remained
5%	5. No comment

33. Type II

5%
31%
36%
15%
13%

In every other day use to what degree did the test uniform maintain a well pressed appearance?

34. Type I

5%	1. Uniform appeared very unkempt
10%	2. Uniform appeared slightly unkempt
49%	3. Uniform appeared pressed
31%	4. Uniform appeared well pressed
5%	5. No comment

35. Type II

5%
18%
41%
28%
8%

How do you feel others evaluated your appearance in the test garment?

36. Type I

5%	1. Negative reaction
2%	2. No noticeable reaction
85%	3. Positive reaction
8%	4. No comment

37. Type II

5%
13%
69%
13%

In what manner did the uniform react to rain, excessive humidity, etc?

38. Type I

0%	1. Completely lost its shape
13%	2. Moderate decrease in shape retention
79%	3. No decrease in shape retention
8%	4. No comment

39. Type II

0%
13%
77%
10%

How would you rate the warmth characteristics of the test garment compared to the standard uniform in cool/cold weather?

40. Type I

15%	1. Less satisfactory
46%	2. Equal
21%	3. More satisfactory
18%	4. No comment

41. Type II

10%
44%
23%
23%

How would you rate the coolness characteristics of the test garment compared to the standard uniform in warm/hot weather?

42. Type I

5%	1. Less satisfactory
33%	2. Equal
57%	3. More satisfactory
5%	4. No comment

43. Type II

5%
33%
54%
8%

Did you perspire more/less than your normal rate in the test garment?

44. Type I

5%	1. More
59%	2. The same
31%	3. Less
5%	4. No comment

45. Type II

5%
59%
28%
8%

To what extent, if any did the fabric show any defects at the end of the test period?

46. Type I

46%	1. None at all
36%	2. Some defects
10%	3. Obvious defects
8%	4. No comment

47. Type II

43%
41%
8%
8%

To what extent, if any, did the seam construction show any defects at the end of the test period?

48. Type I

75%	1. None at all
15%	2. Some defects
5%	3. Obvious defects
5%	4. No comment

49. Type II

74%
13%
5%
8%

After washing the uniform did you notice any spots or stains?

50. Type I

77%	1. No spots or stains remained
8%	2. Almost no spots or stains remained
2%	3. Some spots or stains remained
0%	4. Almost all spots or remained
13%	5. No comment

51. Type II

77%
5%
3%
2%
13%

If so was it:

52. Type I

3%	1. Food
0%	2. Ink
0%	3. Oil
3%	4. Alcohol
3%	5. Coffee
0%	6. Grease
0%	7. Tea
91%	8. None

53. Type II

10%
0%
0%
3%
3%
0%
0%
84%

Did the crease stay in the sleeve and skirt bottom?

54. Type I

46%	1. No affect
26%	2. Slight affect
13%	3. Moderate affect
0%	4. Marked affect
15%	5. No comment

55. Type II

46%
21%
10%
0%
23%

How many times was the uniform laundered?

56. Type I

Average 14 times

57. Type II

Average 13 times

To what extent, if any, did the lining show any defects at the end of the test period?

58. Type I

69%	1. None at all
13%	2. Some defects
10%	3. Obvious defects
8%	4. No comment

59. Type II

74%
5%
8%
13%

To what extent did perspiration affect the fabric's color?

60. Type I

85%	1. No affect
8%	2. Slight affect
2%	3. Moderate affect
0%	4. Marked affect
5%	5. No comment

61. Type II

77%
13%
2%
0%
8%

How do you consider the weight of the garment?

62. Type I

8%	1. Too light
85%	2. Satisfactory
2%	3. Too heavy
5%	4. No comment

63. Type II

2%
83%
2%
13%

How do you feel the construction of the test garment compares with that of the standard uniform?

64. Type I

17%	1. Inferior
28%	2. Equal
48%	3. Superior
7%	4. No comment

65. Type II

18%
28%
46%
8%

In general, what was your overall reaction to your test garment?

1	2	3	4	5	6	7
Unfavorable				Favorable		

66. Type I

0%	8%	0%	5%	10%	23%	49%
No comment - 5%						

67. Type II

5%	5%	5%	15%	10%	15%	37%
No comment - 8%						

Do you recommend this uniform for Optional wear?

1	2	3	4	5	6	7
Unfavorable				Favorable		

68. Type I

10%	5%	0%	2%	3%	21%	59%
No comment - 0%						

69. Type II

15%	5%	0%	8%	3%	15%	41%
No comment - 13%						

Which uniform do you like best?

70. Type I		
Texturized Polyester Serge	59%	
No comment	13%	
Type II		
Texturized Polyester Gabardine	18%	
No comment	10%	